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EXAMINER
CHANKONG, DOHM

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 October 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,2,6-12 and 15-17</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1, 2, 6-12, and 15-17</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/8/2008</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to Applicant's amendment filed on 10/8/2008. Claims 1, 7, 10-

12, and 15-17 are amended. Claims 1, 2, 6-12, and 15-17 are presented for further examination.

2.   This action is a final rejection.

Response to Arguments

3.   Applicant's arguments with respect to claims 1, 2, 6-12, and 15-17 have been considered

but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Applicant's argument with respect to McCanne is addressed here; Applicant argues that

McCanne fails to disclose resolving an anycast address to a corresponding unicast address by

transmitting a second request to the anycast address for the corresponding unicast network

address in response to the first request for an information object at an anycast address.

        Contrary to Applicant's argument, McCanne discloses the claimed limitation. McCanne

discloses a client that submits a first request to an ARN [column 15 «lines 59-60»]. In response

to this first request, McCanne discloses that the ARN initiates a "dialogue" with a service node

S. The request from the ARN to the service node reads on Applicant's claimed second request.

In response to the ARN's request, the service node returns "information to the ARN that is

required to properly redirect C to S." The information that is returned to the ARN is the unicast

address for the service node [column 10 «lines 40-43»]. The effect of this functionality is the

resolution of the ARN's anycast address to the service node's unicast address. This teaching

reads on Applicant's claimed limitation.

Information Disclosure Statement

4.   The examiner has considered the information disclosure statement (IDS) submitted on

10/8/2008.

Claim Interpretation

5.   Applicant's independent claims recite a WILD protocol that runs on top of a

Transmission Control Protocol. Because Applicant's specification does not describe the WILD

protocol but instead references provisional application 60|200401, Applicant's WILD protocol is

interpreted consistent with that provisional application. The provisional describes a protocol that

determines "distance" between network devices using metrics such as average delay, average

processing delay, reliability of path, and availability of the path [pgs. 12-13].

McCanne (USP 6415323) describes using a local monitoring protocol to map a client to

another information object repository by utilizing the protocol to determine the candidate service

node based on load and availability information; this functionality corresponds to the claimed

WILD protocol [column 16 «lines 13-17»]. The monitoring protocol keeps track of various

metrics such as availability of the path [column 17 «lines 48-58»]. McCanne describes selecting

a network device that has the best network characteristics and therefore is the "closest" to the

ARN. Thus, McCanne's local monitoring protocol is interpreted as Applicant's claimed WILD

protocol.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

6.   Claims 1, 2, 6-12, 15 and 16 are rejected under 35 U.S.C §103(a) as being unpatentable

over McCanne et al, U.S Patent No. 6.415.323 ["McCanne"], in view of Yamano, U.S. Patent

No. 6.314.088, in further view of an Kraft, U.S Patent No. 6.529.939, in further view of Grove et

al, U.S. Patent No. 6.820.133 ["Grove"].

7.   All citations are to McCanne unless otherwise noted.

8.   As to claim 1, McCanne discloses a method comprising:

        receiving a first request for an information object at an anycast address, wherein the

request is received at an information object repository selected according to specified

performance metrics [column 11 «lines 58-59» | column 15 «line 67» to column 16 «line 8» : *a*

client submits a request to the ARN, where the ARN advertises an anycast address | column 19

«lines 15-17»] by mapping an address of a client to one or more addresses of information object

repositories and to one or more addresses of routers that have a best type-of-service distance to

the address of the client [Grove, column 5 «lines 59-62» | column 7 «lines 45-51»] by executing

a Web Information Locator by Distance (WILD) communication protocol between the routers

that runs on top of a Transmission Control Protocol (TCP) [column 16 «lines 13-17» : *McCanne*

describes using a local monitoring protocol to map a client to another information object

repository by utilizing the protocol to determine the candidate service node based on load and

availability information; this functionality corresponds to the claimed WILD protocol | column

17 «lines 45-47» : *McCanne does not expressly disclose that the monitoring protocol "runs on*

top" of TCP however such a feature is implied from McCanne's disclosure. McCanne discloses

utilizing TCP to connect to service nodes within the network (column 15, lines 1-6). McCanne

additionally discloses that the ARN performs the service node selection protocol over the

network. Therefore, one of ordinary skill in the art would have reasonably inferred that the local

monitoring protocol is run on top of TCP (see also, column 19, lines 11-13)];

        resolving the anycast address to a corresponding unicast network address for the

information object, wherein the resolving includes transmitting a second request for the

corresponding unicast network address in response to the first request [See response to

arguments above | column 10 «lines 40-43» | column 15 «lines 61-65» | column 16 «lines 17-26»

anycast address is resolved to a service node's unicast address in response to the client's initial

request for content from the ARN], awaiting an anycast resolution response to the second request

for a predetermined time; and returning a failure message if the response to the second request is

not received within the predetermined time [Kraft, column 3 «lines 25-37], wherein the second

request is a single IP packet having the anycast network address [column 16 «lines 52-53» :

service request to the anycast address A. This teaching implies that the request has the anycast

network address];

instructing the information object repository to obtain a copy of the information object at

the corresponding unicast network address [Yamano, Figure 5 | column 1 «lines 21-30» | column

4 «lines 30-36» | column 5 «line 64» to column 6 «line 15»]; and

returning the corresponding unicast network address in response to the second request ,

the anycast resolution response is a single IP packet having the corresponding unicast network

address [column 10 «lines 40-43» | column 16 «lines 17-29» : *a redirection message that directs*

a client to a "normally-addressed and routed (unicast) service node"].

McCanne does not explicitly disclose three limitations: (2) waiting for an anycast

resolution response to the second request for a predetermined time and returning a failure

message if the response to the second request is not received within the predetermined time; and

(3) instructing the information object repository to obtain a copy of the information object at the

corresponding unicast address.

With respect to the first limitation, Grove is directed to a method for increasing the

performance of network traffic over the Internet [abstract]. To achieve this goal, Grove utilizes a

mapping feature that maps an address of a client to an information object repository using

anycast [Figure 11 | column 19 «lines 15-37» where : Grove's server's read on the claimed

information object repository] as well as mapping the client's address to a router address that has

a best type-of service distance to the client's address [column 32 «lines 41-53» where : Grove's

c-node reads on the claimed router since the c-node connects the client to the object repository].

Grove further discloses that his c-nodes execute a protocol between the c-nodes to determine the

best distance between the c-nodes and the clients [column 5 «lines 59-62» | column 7 «lines 45-

51»]. It would have been obvious to one of ordinary skill in the art to have modified McCanne's

anycast system with Grove's mapping features. Grove's features improve on McCanne's system by mapping the client to both the repository as well as the routers within the network which improve the network's performance by selecting the most efficient network path [see Grove, column 7 «lines 45-51»].

With respect to the second limitation, while McCanne does disclose transmitting a second request for a corresponding unicast address, McCanne does not disclose the waiting feature as claimed, such a feature was well known in the art at the time of Applicant's invention. For example, Kraft discloses updating the client about the failure of an information request when a response to the request is not received within a certain timeout period [column 3 «lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement this failure message utility into McCanne's information object repository to keep the clients informed that their request for information could not be handled at the specified unicast address and to signal to the user to reconnect to the service after losing the connection [see Kraft, column 3 «lines 38-60»].

While Kraft is not directed to anycast or address resolution requests, the functionality of waiting for a timeout period and providing error messages when a response is not received during the period is well known functionality that would be applicable to any type of request or addressing protocol. Within McCanne's system, Kraft's error message capability would enable the ARN to inform clients that a service node has not responded within a certain timeout period.

With respect to third limitation, McCanne does disclose that the repository is capable of servicing the clients' requests directly but does not explicitly disclose obtaining a copy at the corresponding unicast address [column 14 «lines 27-32» | column 16 «lines 3-11»]. Yamano

discloses a repository (that receives an request for an object at an anycast address) that obtains a

copy of the requested information object at a corresponding unicast address [Figure 5 | column 1

«lines 21-30» | column 4 «lines 30-36» | column 5 «line 64» to column 6 «line 15» where :

Yamano's configuration server node 11 retrieves the object requested by the client from another

server node's ATM address (unicast)]. Therefore Yamano teaches that a repository, that acts as a

redirector such as one seen in McCanne, can also retrieve content from other repositories within

the network. One of ordinary skill in the art would have been able to incorporate Yamano's

functionalities into McCanne's repository (redirector) to allow the repository to retrieve content

from other repositories at the corresponding unicast address to be able to directly service the

request in the future. Since McCanne already teaches that his repository can directly handle

content requests, implementing Yamano's teaching would only enhance McCanne's capabilities.

9.   As to claim 2, McCanne discloses the method of claim 1 further comprising returning the

unicast address for the information object [column 10 «lines 35-43»].

10.   As to claim 6, McCanne discloses the method of claim 5 wherein the performance

metrics comprise one or more of: reliability of a path from the selected information object

repository, available bandwidth in said path, average delay from the selected information object

repository to a source of the request, average processing delay at the selected information object

repository and loads on the selected information object repository [column 17 «lines 45-46» |

column 18 «lines 64-67» : monitors load characteristics].

11.   As to claims 7 and 10, as they do not teach or further define over the prior art references, they are similarly rejected for at least the same reasons set forth for claim 1.

12.   As to claim 8, McCanne discloses the information object repository of claim 7 being further configured to resolve the network layer anycast address by transmitting the second request for the network layer unicast address and awaiting the response thereto [column 11 «lines 24-36 and lines 58-65», column 12 «lines 16-24» | column 13 «lines 35-42»].

13.   As to claim 9, McCanne discloses the information object repository of claim 7 to monitor if the request for the network layer unicast address is not received within a timeout period [column 13 <lines 35-36>] but does not specifically disclose that a failure message is sent to the source of the request for the information object.

        Kraft discloses updating the client about the failure of an information request when a response to the request is not received within a certain timeout period [column 3 «lines 25-37]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement this failure message utility into McCanne's information object repository to keep the clients informed that their request for information could not be handled at the specified unicast address and to signal to the user to reconnect to the service after losing the connection [see Kraft, column 3 «lines 38-60»].

14.   Claim 11 is a network that contains the information object repository of claim 8. Therefore claim 11 is rejected for the same reasons as set forth for claim 8.

15.   Claim 12 is a network that contains the information object repository of claim 9.

Therefore claim 12 is rejected for the same reasons as set forth for claim 9.

16.   As to claim 15, McCanne discloses the network of claim 14 wherein the anycast

resolution response to the second request for the network layer unicast address is returned by a

host having the network layer unicast address [column 16 «lines 18-26» where: 'S' service node

is the host with the network layer unicast address].

17.   As to claim 16, McCanne discloses the first request is received at the information object

repository selected without regard as to whether the information object is actually stored at the

information object repository [column 8 «lines 14-23» | column 11 «lines 58-62» where: the

client sends an initial request to the ARN (information object repository). McCanne stresses that

the only requirement for directing a client to a service node is that the node is the closest to the

client; therefore, the implication is that there is no regard as to whether or not the content is on

the service node].

18.   Claim 17 is rejected under 35 U.S.C §103(a) as being unpatentable over McCanne,

Yamano, Kraft, and Grove, in further view of McCanne, U.S Patent No. 6.611.872

["McCanne.2"].

19.   As to claim 17, McCanne does not disclose the single IP packet comprising the second

request for the network layer unicast address and the single IP packet comprising the anycast

resolution response to the second request for the network layer unicast address further comprise

an IP header and a UDP header.

However, in the same field of invention, McCanne.2 discloses that the single IP packet

comprising the request for the network layer unicast address and the single IP packet comprising

the response to the request for the network layer unicast address further comprise an IP header

and a UDP header [Figure 6 «items 204, 210, 220» (where overlay header is in UDP format) |

column 4 «lines 54-56» | column 30 «lines 30-41» where : the packets sent through the network

all have an IP header and a UDP overlay header]. It would have been obvious to one of ordinary

skill in the art to modify McCanne's packets to include both IP and UDP headers as taught by

McCanne.2. The benefits of incorporating both protocol headers into a packet enable "clients to

connect to overlay routers using unicast UDP or TCP through a redirection and location service"

[McCanne.2, column 4 «lines 3-8»]. Note that McCanne is directed towards providing a

redirection and location service [abstract].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DOHM CHANKONG whose telephone number is (571)272-

3942. The examiner can normally be reached on Monday-Friday [8:30 AM to 4:30 PM].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John Follansbee can be reached on 571.272.3964. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

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information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dohm Chankong/
Examiner, Art Unit 2452